

SEQUENCE LISTING

<110> Tang, Y. Tom
 Zhou, Ping
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 Liu, Chenghua
 Asundi, Vinod
 Zhao, Qing A.
 Yang, Yonghong
 Ren, Feiyan
 Wang, Jian-Rui
 Zhang, Jie
 Drmanac, Radoje T.

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 Polypeptides

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<151> 2000-08-23

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<151> 2000-03-31

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1955	1960
1965	
gcc gtc agc aaa ggc ttt gat ccc gac tgt aat aag acc aac ggc cag	5952
Ala Val Ser Lys Gly Phe Asp Pro Asp Cys Asn Lys Thr Asn Gly Gln	
1970	1975
1980	
tgc caa tgc aag gag aat tac tac aag ctc cta gcc cag gac acc tgt	6000
Cys Gln Cys Lys Glu Asn Tyr Tyr Lys Leu Leu Ala Gln Asp Thr Cys	
1985	1990
1995	2000
ctg ccc tgc gac tgc ttc ccc cat ggc tcc cac agc cgc act tgc gac	6048
Leu Pro Cys Asp Cys Phe Pro His Gly Ser His Ser Arg Thr Cys Asp	
2005	2010
2015	
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Met Ala Thr Gly Gln Cys Ala Cys Lys Pro Gly Val Ile Gly Arg Gln	

2020	2025	2030	
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Cys Asn Arg Cys Asp Asn Pro Phe Ala Glu Val Thr Thr Leu Gly Cys			
2035	2040	2045	
gaa gtg atc tac aat ggc tgt ccc aaa gca ttt gag gcc ggc atc tgg			6192
Glu Val Ile Tyr Asn Gly Cys Pro Lys Ala Phe Glu Ala Gly Ile Trp			
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tgg cca cag acc aag ttc ggg cag ccg gct gcg gtg cca tgc cct aag			6240
Trp Pro Gln Thr Lys Phe Gly Gln Pro Ala Ala Val Pro Cys Pro Lys			
2065	2070	2075	2080
gga tcc gtt gga aat gcg gtc cga cac tgc agc ggg gag aag ggc tgg			6288
Gly Ser Val Gly Asn Ala Val Arg His Cys Ser Gly Glu Lys Gly Trp			
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ctg ccc cca gag ctc ttt aac tgt acc acc atc tcc ttc gtg gac ctc			6336
Leu Pro Pro Glu Leu Phe Asn Cys Thr Thr Ile Ser Phe Val Asp Leu			
2100	2105	2110	
agg gcc atg aat gag aag ctg agc cgc aat gag acg cag gtg gac ggc			6384
Arg Ala Met Asn Glu Lys Leu Ser Arg Asn Glu Thr Gln Val Asp Gly			
2115	2120	2125	
gcc agg gcc ctg cag ctg gtg agg gcg ctg cgc agt gct aca cag cac			6432
Ala Arg Ala Leu Gln Leu Val Arg Ala Leu Arg Ser Ala Thr Gln His			
2130	2135	2140	
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Thr Gly Thr Leu Phe Gly Asn Asp Val Arg Thr Ala Tyr Gln Leu Leu			
2145	2150	2155	2160
ggc cac gtc ctt cag cac gag agc tgg cag cag ggc ttc gac ctg gca			6528
Gly His Val Leu Gln His Glu Ser Trp Gln Gln Gly Phe Asp Leu Ala			
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gcc acg cag gac gcc gac ttt cac gag gac gtc atc cac tcg ggc agc			6576
Ala Thr Gln Asp Ala Asp Phe His Glu Asp Val Ile His Ser Gly Ser			
2180	2185	2190	
gcc ctc ctg gcc cca gcc acc agg gcg gcg tgg gag cag atc cag cgg			6624
Ala Leu Leu Ala Pro Ala Thr Arg Ala Ala Trp Glu Gln Ile Gln Arg			
2195	2200	2205	
agc gag ggc ggc acg gca cag ctg ctc cgg cgc ctc gag ggc tac ttc			6672
Ser Glu Gly Gly Thr Ala Gln Leu Leu Arg Arg Leu Glu Gly Tyr Phe			
2210	2215	2220	
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Ser Asn Val Ala Arg Asn Val Arg Arg Thr Tyr Leu Arg Pro Phe Val			
2225	2230	2235	2240
atc gtc acc gcc aac atg att ctt gct gtc gac atc ttt gac aag ttc			6768
Ile Val Thr Ala Asn Met Ile Leu Ala Val Asp Ile Phe Asp Lys Phe			
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ctg gag gtg gag gag cga acc aag cct gtc tgc gtg ttc tgg aac cac Leu Glu Val Glu Glu Arg Thr Lys Pro Val Cys Val Phe Trp Asn His 2405 2410 2415	7248
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Arg Ser Asn Leu His Ser Ile His Lys His Leu Ala Val Ala Leu Phe	
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Pro Thr Ser Ser Arg Thr Ser Ser Leu Gly Ser Gly Gly Pro Asp Cys			
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Ala Ile Thr Val Lys Ser Pro Gly Arg Glu Pro Gly Arg Asp His Leu			
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Tyr Gly Lys Gly Lys Lys Leu Lys Thr Lys Ala Leu Glu Pro Pro Ala		
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Cys Tyr Leu Asn Ser Leu Leu Gln Thr Leu His Phe Thr Pro Glu Phe		
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Tyr His Gly Thr Ile Val Asn Gln Ile Val Cys Lys Glu Cys Lys Asn		
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ggc act gtc ctc aca gcc tta gca atc cca gca ggt gtc atc ttc atc	2179
Gly Thr Val Leu Thr Ala Leu Ala Ile Pro Ala Gly Val Ile Phe Ile	
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Asn Ser Ala Gly Cys Pro Gly Gly Glu Gly Trp Thr Ala Ile Pro Lys	
690 695 700 705	
gaa gac atg agg aag acg ttc agg gag caa ggg ctc aga aat gga agc	2275
Glu Asp Met Arg Lys Thr Phe Arg Glu Gln Gly Leu Arg Asn Gly Ser	
710 715 720	
tca att tta att cag gat tct cat gat gat aac agc ttg ttg acc aag	2323
Ser Ile Leu Ile Gln Asp Ser His Asp Asp Asn Ser Leu Leu Thr Lys	
725 730 735	
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Glu Glu Lys Trp Val Thr Ser Met Asn Glu Ile Asp Trp Leu His Val	
740 745 750	
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Lys Asn Leu Cys Gln Leu Glu Ser Glu Glu Lys Gln Val Lys Ile Ser	
755 760 765	
gca act gtt aac aca atg gtg ttt gat att cga att aaa gcc ata aag	2467
Ala Thr Val Asn Thr Met Val Phe Asp Ile Arg Ile Lys Ala Ile Lys	
770 775 780 785	
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Glu Leu Lys Leu Met Lys Glu Leu Ala Asp Asn Ser Cys Leu Arg Pro	
790 795 800	
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Ile Asp Arg Asn Gly Lys Leu Leu Cys Pro Val Pro Asp Ser Tyr Thr	
805 810 815	
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Leu Lys Glu Ala Glu Leu Lys Met Gly Ser Ser Leu Gly Leu Cys Leu	
820 825 830	
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Gly Lys Ala Pro Ser Ser Ser Gln Leu Phe Leu Phe Phe Ala Met Gly	
835 840 845	
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Ser Asp Val Gln Pro Gly Thr Glu Met Glu Ile Val Val Glu Glu Thr	
850 855 860 865	
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Ile Ser Val Arg Asp Cys Leu Lys Leu Met Leu Lys Lys Ser Gly Leu	
870 875 880	
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Gln Gly Asp Ala Trp His Leu Arg Lys Met Asp Trp Cys Tyr Glu Ala	
885 890 895	

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tgt Cys	tct Ser 915	gga Gly	gat Asp	act Thr	ttg Leu	ctt Leu 920	tta Leu	att Ile	gaa Glu	gga Gly	caa Gln 925	ctt Leu	cct Pro	cct Pro	ctg Leu	2899
ggc Gly 930	ttc Phe	ctg Leu	aag Lys	gtg Val	ccc Pro 935	atc Ile	tgg Trp	tgg Trp	tac Tyr	cag Gln 940	ctt Leu	cag Gln	ggc Gly	ccc Pro	tca Ser 945	2947
gga Gly	cac His	tgg Trp	gag Glu	agt Ser 950	cat His	cag Gln	gac Asp	cag Gln	acc Thr 955	aac Asn	tgt Cys	act Thr	tcg Ser	tct Ser 960	tgg Trp	2995
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cct Pro	gcg Ala 980	caa Gln	gtt Val	tct Ser	ctc Leu	ctc Leu	tac Tyr 985	ttg Leu	gga Gly	gac Asp	ata Ile 990	gag Glu	atc Ile	tca Ser	gaa Glu	3091
gat Asp 995	gcc Ala	acg Thr	ctg Leu	gcg Ala	gag Glu	ctg Leu	aag Lys 1000	tct Ser	cag Gln	gcc Ala	atg Met 1005	acc Thr	ttg Leu	cct Pro	cct Pro	3139
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gtg Val	gag Glu	agg Arg	aag Lys	cgc Arg	cca Pro	ggc Gly	agg Arg	ctt Leu	tta Leu	cga Arg	act Thr	gac Asp	cgg Arg	cag Gln	cca Pro	3235
ctc Leu	agc Ser	ccc Pro	cag Gln	gac Asp	gtg Val	ctg Leu	ctg Leu	agg Arg	aca Thr	cag Gln	gtg Val	cgc Arg	atc Ile	cct Pro	ggc Gly	3283
gag Glu	agg Arg	acc Thr	tat Tyr	gcc Ala	cct Pro	gcc Ala	ctg Leu	gac Asp	ctg Leu	gtg Val	tgg Trp	aac Asn	gcg Ala	gcc Ala	cag Gln	3331
ggc Gly 1075	ggg Gly	act Thr	gcc Ala	ggc Gly	tcc Ser	ctg Leu	agg Arg	cag Gln	aga Arg	gtt Val	gcc Ala	gat Asp	ttc Phe	tat Tyr	cgt Arg	3379
ctt Leu 1090	ccc Pro	gtg Val	gag Glu	aag Lys	att Ile	gaa Glu	att Ile	gcc Ala	aaa Lys	tac Tyr	ttt Phe	ccc Pro	gaa Glu	aag Lys	ttc Phe	3427
gag Glu	tgg Trp	ctt Leu	ccg Pro	ata Ile	tct Ser	agc Ser	tgg Trp	aac Asn	caa Gln	caa Gln	ata Ile	acc Thr	aag Lys	agg Arg	aaa Lys	3475

aag aaa aaa aaa caa gat tat ttg caa ggg gca ccg tat tac ttg aaa Lys Lys Lys Lys Gln Asp Tyr Leu Gln Gly Ala Pro Tyr Tyr Leu Lys 1125 1130 1135	3523
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cac tcg cag tgg aag ctt ctg gag ctg aag gga aag aat ctc ctg att His Ser Gln Trp Lys Leu Leu Glu Leu Lys Gly Lys Asn Leu Leu Ile 1155 1160 1165	3619
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ctg ctt cgg ggg ttt tcc tgt tta aag aaa atg cac aac gtg tgc gtg Leu Leu Arg Gly Phe Ser Cys Leu Lys Lys Met His Asn Val Cys Val 1250 1255 1260 1265	3907
aac cgc agg tat gga ggc agc ggc atg ccg ttg ctc cgc tgt ggg aga Asn Arg Arg Tyr Gly Gly Ser Gly Met Pro Leu Leu Arg Cys Gly Arg 1270 1275 1280	3955
cgg ttg act ttc cca gac agc agc tta gcg gaa agc agc atc ccg aag Arg Leu Thr Phe Pro Asp Ser Ser Leu Ala Glu Ser Ser Ile Pro Lys 1285 1290 1295	4003
acg gtg tcg cat gtc ctg agc ctg ctt gtc acc tgg gcc tca cgg ttt Thr Val Ser His Val Leu Ser Leu Leu Val Thr Trp Ala Ser Arg Phe 1300 1305 1310	4051
ctc gtc agc ccc gtc act gat ggg aag cag cac tga Leu Val Ser Pro Val Thr Asp Gly Lys Gln His * 1315 1320 1325	4087

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                                   Met
                                   1

ttt ggg gac ctg ttt gaa gag gag tat tcc act gtg tct aat aat cag      163
Phe Gly Asp Leu Phe Glu Glu Glu Tyr Ser Thr Val Ser Asn Asn Gln
                    5                      10                      15

tat gga aaa ggg aag aaa tta aag act aaa gct ttg gag cca cct gct      211
Tyr Gly Lys Lys Lys Leu Lys Thr Lys Ala Leu Glu Pro Pro Ala
                    20                      25                      30

cct aga gaa ttc acc aat tta agc gga atc aga aat cag ggt gga acc      259
Pro Arg Glu Phe Thr Asn Leu Ser Gly Ile Arg Asn Gln Gly Gly Thr
                    35                      40                      45

tgt tac ctc aat tcc ctt ctt cag act ctt cat ttc aca cct gaa ttc      307
Cys Tyr Leu Asn Ser Leu Leu Gln Thr Leu His Phe Thr Pro Glu Phe
                    50                      55                      60                      65

aga gaa gct cta ttt tct ctt ggc cca gaa gag ctt ggt ttg ttt gaa      355
Arg Glu Ala Leu Phe Ser Leu Gly Pro Glu Glu Leu Gly Leu Phe Glu
                    70                      75                      80

gat aag gat aaa ccc gat gca aag gtt cga atc atc cct tta cag tta      403
Asp Lys Asp Lys Pro Asp Ala Lys Val Arg Ile Ile Pro Leu Gln Leu
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cag cgc ttg ttt gct cag ctt ctg ctc tta gac cag gaa gct gca tcc      451
Gln Arg Leu Phe Ala Gln Leu Leu Leu Leu Asp Gln Glu Ala Ala Ser
                    100                      105                      110

aca gca gac ctc act gac agc ttt ggg tgg acc agt aat gag gaa atg      499
Thr Ala Asp Leu Thr Asp Ser Phe Gly Trp Thr Ser Asn Glu Glu Met
                    115                      120                      125

agg caa cat gat gtg cag gaa ctg aat cga atc ctc ttc agc gct ttg      547
Arg Gln His Asp Val Gln Glu Leu Asn Arg Ile Leu Phe Ser Ala Leu
                    130                      135                      140                      145

gaa act tct tta gtt ggg acc tcc ggt cat gac ctc atc tat cgt ctg      595
Glu Thr Ser Leu Val Gly Thr Ser Gly His Asp Leu Ile Tyr Arg Leu
                    150                      155                      160

tac cat gga acc att gtt aac cag att gtt tgt aaa gaa tgt aag aac      643
Tyr His Gly Thr Ile Val Asn Gln Ile Val Cys Lys Glu Cys Lys Asn

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165	170	175	
gtt agc gag agg cag gaa gac ttc tta gat cta aca gta gca gtc aaa			691
Val Ser Glu Arg Gln Glu Asp Phe Leu Asp Leu Thr Val Ala Val Lys			
180	185	190	
aat gta tcc ggt ttg gaa gat gct ctc tgg aac atg tat gta gaa gag			739
Asn Val Ser Gly Leu Glu Asp Ala Leu Trp Asn Met Tyr Val Glu Glu			
195	200	205	
gaa gtt ttt gat tgt gac aac ttg tac cac tgt gga act tgt gac agg			787
Glu Val Phe Asp Cys Asp Asn Leu Tyr His Cys Gly Thr Cys Asp Arg			
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ctg gtt aaa gca gca aag tcg gcc aaa tta cgt aag ctg cct cct ttt			835
Leu Val Lys Ala Ala Lys Ser Ala Lys Leu Arg Lys Leu Pro Pro Phe			
	230	235	240
ctt act gtt tca tta cta aga ttt aat ttt gat ttt gtg aaa tgc gaa			883
Leu Thr Val Ser Leu Leu Arg Phe Asn Phe Asp Phe Val Lys Cys Glu			
	245	250	255
cgc tac aag gaa act agc tgt tat aca ttc cct ctc cgg att aat ctc			931
Arg Tyr Lys Glu Thr Ser Cys Tyr Thr Phe Pro Leu Arg Ile Asn Leu			
	260	265	270
aag ccc ttt tgt gaa cag agt gaa ttg gat gac tta gaa tat ata tat			979
Lys Pro Phe Cys Glu Gln Ser Glu Leu Asp Asp Leu Glu Tyr Ile Tyr			
	275	280	285
gac ctc ttc tca gtt att ata cac aaa ggt ggc tgc tac gga ggc cat			1027
Asp Leu Phe Ser Val Ile Ile His Lys Gly Gly Cys Tyr Gly Gly His			
	290	295	300
tac cat gta tat att aaa gat gtt gat cat ttg gga aac tgg cag ttt			1075
Tyr His Val Tyr Ile Lys Asp Val Asp His Leu Gly Asn Trp Gln Phe			
	310	315	320
caa gag gaa aaa agt aaa cca gat gtg aat ctg aaa gat ctc cag agt			1123
Gln Glu Glu Lys Ser Lys Pro Asp Val Asn Leu Lys Asp Leu Gln Ser			
	325	330	335
gaa gaa gag att gat cat cca ctg atg att cta aaa gca atc tta tta			1171
Glu Glu Glu Ile Asp His Pro Leu Met Ile Leu Lys Ala Ile Leu Leu			
	340	345	350
gag gag aat aat cta att cct gtt gat cag ctg ggc cag aaa ctt ttg			1219
Glu Glu Asn Asn Leu Ile Pro Val Asp Gln Leu Gly Gln Lys Leu Leu			
	355	360	365
aaa aag ata gga ata tct tgg aac aag aag tac aga aaa cag cat gga			1267
Lys Lys Ile Gly Ile Ser Trp Asn Lys Lys Tyr Arg Lys Gln His Gly			
	370	375	380
cca ttg cgg aag ttc tta cag ctc cat tct cag ata ttt cta ctc agt			1315
Pro Leu Arg Lys Phe Leu Gln Leu His Ser Gln Ile Phe Leu Leu Ser			
	390	395	400

90 95 100

gcatttatgc atggcatgaa agatggcatt ttccaaaggc caaggaagag taaggcaagg 524

gcctggaggt ggaactgtac ttggcagtgg gcgtgcacgc ccattggcca tcatatgtta 584

aggaccacaa ggtccctctt gtgacaccag aatgaaaggg cctggcaa at ggaacaacca 644

gccagggggc ctgggttagcc cttttatata ccacaattat accctggggc tctcttgtcc 704

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 His Glu Ala Glu Glu Gly His Gly Ile Thr His Ser Cys Ala Val Cys
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att ctc tgt ggg cct agc agg gaa ggg gac agc cct gtg gca atg ggc 151
 Ile Leu Cys Gly Pro Ser Arg Glu Gly Asp Ser Pro Val Ala Met Gly
 25 30 35

atg aca cgg atg ctc ctg gaa tgc agt ctc agt gac aag ttg tgt gtc 199
 Met Thr Arg Met Leu Leu Glu Cys Ser Leu Ser Asp Lys Leu Cys Val
 40 45 50

atc cag gag aag cag tat gaa gtg att atc gtc cca act ttg ttg gtt 247
 Ile Gln Glu Lys Gln Tyr Glu Val Ile Ile Val Pro Thr Leu Leu Val
 55 60 65 70

act atc ttc ctc atc ctt ctt ggg gtc atc ctg tgg ctt ttt atc aga 295
 Thr Ile Phe Leu Ile Leu Leu Gly Val Ile Leu Trp Leu Phe Ile Arg
 75 80 85

gaa caa aga act caa cag cag cgt tct gga cct caa ggc att gcc cct 343
 Glu Gln Arg Thr Gln Gln Gln Arg Ser Gly Pro Gln Gly Ile Ala Pro
 90 95 100

gtt cct cca cct agg gac cta agc tgg gaa gca gga cat gga gga aat 391
 Val Pro Pro Pro Arg Asp Leu Ser Trp Glu Ala Gly His Gly Gly Asn

105	110	115	
gtg gct ttg cca ctt aag gag aca tcc	gtg gaa aac ttt ctg gga gct	439	
Val Ala Leu Pro Leu Lys Glu Thr Ser Val Glu Asn Phe Leu Gly Ala			
120	125 130		
acc aca cct gcc ctg gct aag ctg cag gtg ccg cgg gag caa ctc tct	487		
Thr Thr Pro Ala Leu Ala Lys Leu Gln Val Pro Arg Glu Gln Leu Ser			
135	140 145 150		
gaa gtt ctg gag cag att tgc agt ggt agc tgt ggg ccc atc ttt cga	535		
Glu Val Leu Glu Gln Ile Cys Ser Gly Ser Cys Gly Pro Ile Phe Arg			
	155 160 165		
gcc aat atg aac act ggg gac cct tct aag ccc aag agt gtt att ctc	583		
Ala Asn Met Asn Thr Gly Asp Pro Ser Lys Pro Lys Ser Val Ile Leu			
	170 175 180		
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Lys Ala Leu Lys Glu Pro Ala Gly Leu His Glu Val Gln Asp Phe Leu			
	185 190 195		
ggg cga atc aaa ttc cat caa tac ctg ggg aaa cac aaa aac ctg gtg	679		
Gly Arg Ile Lys Phe His Gln Tyr Leu Gly Lys His Lys Asn Leu Val			
	200 205 210		
cag ctg gaa ggc tgc tgc act gaa aag ctg cca ctc tat atg gtg ttg	727		
Gln Leu Glu Gly Cys Cys Thr Glu Lys Leu Pro Leu Tyr Met Val Leu			
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gag gat gtg gcc cag ggg gac ctg ctc ggc ttt ctc tgg acc tgt cgg	775		
Glu Asp Val Ala Gln Gly Asp Leu Leu Gly Phe Leu Trp Thr Cys Arg			
	235 240 245		
cgg gat gtg atg act atg gat ggt ctt ctc tat gat ctc aca gaa aaa	823		
Arg Asp Val Met Thr Met Asp Gly Leu Tyr Asp Leu Thr Glu Lys			
	250 255 260		
caa gta tat cac atc gga aag cag gtc ctt ttg gcg ctg gaa ttc ctg	871		
Gln Val Tyr His Ile Gly Lys Gln Val Leu Leu Ala Leu Glu Phe Leu			
	265 270 275		
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Gln Glu Lys His Leu Phe His Gly Asp Val Ala Ala Arg Asn Ile Leu			
	280 285 290		
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Met Gln Ser Asp Leu Thr Ala Lys Leu Cys Gly Leu Gly Leu Ala Tyr			
	295 300 305 310		
gaa gtt tac acc cga ggg gcc atc tcc tct act caa acc ata cct ctc	1015		
Glu Val Tyr Thr Arg Gly Ala Ile Ser Ser Thr Gln Thr Ile Pro Leu			
	315 320 325		
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Lys Trp Leu Ala Pro Glu Arg Leu Leu Leu Arg Pro Ala Ser Ile Arg			
	330 335 340		

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gga gca cca ccg tat cct gaa gtc cct cct acc agc atc cta gag cat 1159
Gly Ala Pro Pro Tyr Pro Glu Val Pro Pro Thr Ser Ile Leu Glu His
360 365 370

ctc caa aga agg aaa atc atg aag aga ccc agt agc tgc aca cat acc 1207
Leu Gln Arg Arg Lys Ile Met Lys Arg Pro Ser Ser Cys Thr His Thr
375 380 385 390

atg tac agt atc atg aag tcc tgc tgg cgc tgg cgt gag gct gac cgc 1255
Met Tyr Ser Ile Met Lys Ser Cys Trp Arg Trp Arg Glu Ala Asp Arg
395 400 405

ccc tca cct aga gag ctg cgc ttg cgc cta gaa gct gcc att aaa act 1303
Pro Ser Pro Arg Glu Leu Arg Leu Arg Leu Glu Ala Ala Ile Lys Thr
410 415 420

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Ala Asp Asp Glu Ala Val Leu Gln Val Pro Glu Leu Val Val Pro Glu
425 430 435

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Leu Tyr Ala Ala Val Ala Gly Ile Arg Val Glu Ser Leu Phe Tyr Asn
440 445 450

tat agc atg ctt tga agagtctcgg gcaagaaaca ttcattgcatg agtatatgtt 1454
Tyr Ser Met Leu *
455

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cgtggccaag gaacttaagg agatgaagtc ccactctgtt gcccaggcta gagtgca      357
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Met Ala Gln Ser Gly Leu Thr Ala Thr Ser Ala Ser Gln Val Gln Ala
  1             5             10             15

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Ile Leu Leu Pro Gln Pro Ala Ser Val Arg His Tyr Ala Trp Val Val
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gac cag att gac acc ctg acc tct gac cta cag ctg gag gat gag atg      501
Asp Gln Ile Asp Thr Leu Thr Ser Asp Leu Gln Leu Glu Asp Glu Met
             35             40             45

act gac agc tcc aaa acg gac acg ctg aat agt agc tca agt ggc aca      549
Thr Asp Ser Ser Lys Thr Asp Thr Leu Asn Ser Ser Ser Ser Gly Thr
             50             55             60

aca gcc tcc agc cta gag aag atc aaa gtg cag gct aat gca ccg ctt      597
Thr Ala Ser Ser Leu Glu Lys Ile Lys Val Gln Ala Asn Ala Pro Leu
             65             70             75             80

att aaa ccc cca gca cac cca tct gct atc ctc acg gtc ctg aga aag      645
Ile Lys Pro Pro Ala His Pro Ser Ala Ile Leu Thr Val Leu Arg Lys
             85             90             95

cca aac cct cca cca cct cct cca agg ttg aca cct gtg aag tgt gaa      693
Pro Asn Pro Pro Pro Pro Pro Pro Arg Leu Thr Pro Val Lys Cys Glu
             100             105             110

gac ccc aaa agg gtg gtt cca act gcc aat cct gta aaa acc aat ggc      741
Asp Pro Lys Arg Val Val Pro Thr Ala Asn Pro Val Lys Thr Asn Gly
             115             120             125

acc ctt cta cga aat gga ggc tta cca ggt gga cct aac aaa att cca      789

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Asn	Gly	Asp	Ile	Cys	Cys	Ile	Pro	Asn	Ser	Asn	Leu	Asp	Lys	Ala	Pro		
145				150					155					160			
gtc	cag	ctt	ctg	atg	cat	aga	cct	gaa	aaa	gac	aga	tgt	ccc	cag	gca	885	
Val	Gln	Leu	Leu	Met	His	Arg	Pro	Glu	Lys	Asp	Arg	Cys	Pro	Gln	Ala		
				165				170						175			
ggg	cct	cga	gaa	cga	gtt	cgg	ttt	aat	gaa	aaa	gta	cag	tac	cat	ggc	933	
Gly	Pro	Arg	Glu	Arg	Val	Arg	Phe	Asn	Glu	Lys	Val	Gln	Tyr	His	Gly		
		180					185						190				
tat	tgt	cct	gac	tgt	gat	acc	cgg	tat	aac	ata	aaa	aac	agg	gag	gtc	981	
Tyr	Cys	Pro	Asp	Cys	Asp	Thr	Arg	Tyr	Asn	Ile	Lys	Asn	Arg	Glu	Val		
		195				200						205					
cac	tta	cac	agt	gaa	cct	gtc	cac	cca	ccg	gga	aag	att	cct	cac	caa	1029	
His	Leu	His	Ser	Glu	Pro	Val	His	Pro	Pro	Gly	Lys	Ile	Pro	His	Gln		
	210					215					220						
ggc	cct	ccc	ctc	cct	cct	aca	ccc	cat	ctc	cct	cct	ttc	cca	cta	gaa	1077	
Gly	Pro	Pro	Leu	Pro	Pro	Thr	Pro	His	Leu	Pro	Pro	Phe	Pro	Leu	Glu		
225				230					235					240			
aat	ggg	gga	atg	gga	ata	agc	cac	agt	aac	agc	ttc	ccc	cct	atc	aga	1125	
Asn	Gly	Gly	Met	Gly	Ile	Ser	His	Ser	Asn	Ser	Phe	Pro	Pro	Ile	Arg		
			245					250						255			
cct	gca	act	gtg	cct	cct	ccc	act	gca	cca	aaa	cca	cag	aag	acg	atc	1173	
Pro	Ala	Thr	Val	Pro	Pro	Pro	Thr	Ala	Pro	Lys	Pro	Gln	Lys	Thr	Ile		
			260				265						270				
ttg	agg	aag	tca	acc	act	aca	acc	gtg	tga	t	gtatgccatt	aaaaaaaaattg				1224	
Leu	Arg	Lys	Ser	Thr	Thr	Thr	Thr	Val	*								
	275						280										
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1812